

### **ABSTRACT**

[0064] A pinned photodiode with a pinned surface layer formed by a self-aligned angled implant is disclosed. The angle of the implant may be tailored to provide an adequate offset between the pinned surface layer and an electrically active area of a transfer gate of the pixel sensor cell. The pinned surface layer is formed by employing the same mask level as the one employed for the formation of the photodiode region, and then implanting dopants at angles other than zero degrees.